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Dynamics of Informal Settlement Expansion on the Urban Fringe: The Case of Birbir Town, Southern Ethiopia

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ABSTRACT

This study examines the dynamics of fringe land invasion in Birbir Town, southern Ethiopia. This study used a descriptive survey design with both qualitative and quantitative data analyses. Primary data were acquired through a household survey, key informant interviews, focus group discussions, and observations. This study also benefited from relevant secondary sources. Using a simple random sampling technique, 156 household heads were selected from Birbir and two adjacent rural areas. The study revealed that informal settlement expansion in the form of fringe land invasion occurs in Birbir Town predominantly due to population increase, urban sprawl, migration, poor land administration and governance systems, a lack of boundary demarcation, and the presence of available unserviced public land near the town. The process was intensified by actors such as farmers, local administrators, informal dealers, politicians, and local elders. The encroachment of urban fringe areas has led to deforestation, relinquishment of cultivable acreage, entitlement disputes, a prevailing trend of illicit land occupation, an unstructured urban expansion pattern, and a surge in criminality, fostering discordant communities. This study contributes to the understanding of informality on the urban fringe as posing socioeconomic and governance challenges in small towns of developing countries by presenting the case of Birbir.

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Highlights

- The study revealed that informal settlement expansion in the form of fringe land invasion occurs in Birbir Town predominantly due to demographic and institutional factors.
- The process of fringe land invasion was intensified by actors such as farmers, local administrators, informal dealers, politicians, and local elders.
- The encroachment of urban fringe areas has led to deforestation, relinquishment of cultivable acreage, entitlement disputes, and an unstructured urban expansion pattern

Contribution to the field statement

- The study contributes to the understanding of informality on the urban fringe as posing socioeconomic and governance challenges in small towns of developing countries by presenting the case of Birbir.
- The study contributes to sustainable urban land development and management in peri-urban interfaces in the cities of sub-Saharan Africa.

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1. Introduction

Informal settlement expansion in the form of illegal land occupations poses a significant challenge in urban settings worldwide (Dovey, 2012; Hosseini et al., 2023; Lombard, 2016; Nassar & Elsayed, 2018). This phenomenon is particularly noteworthy in developing countries, where the economic disparities between affluent and impoverished countries are more pronounced, municipal authorities are unable to supply land for housing, rampant options are prevalent in the land supply process, and a web of actors is involved in the land market (Admasu, 2018; Dube, 2013; Mersha et al., 2022; Mottelson, 2020). This issue is further compounded by the swift pace of urbanization and the migration of individuals from rural to urban areas. The advent and rise of informal urban settlements can be attributed to the escalating trend of urbanization coupled with rapid population growth. Alene (2022) suggest that the growth of informal settlements in urban areas cannot be attributed to a singular determinant. The author argues that various factors contribute to the expansion of informal settlements. Notably, the prevalence of such informal settlements and urban informality is conspicuous on the outskirts of secondary cities of Ethiopia, such as Gondar (Alene, 2022), Bhirdar (Adam, 2014, 2020), Jimma (Abebe et al., 2019), Woldia (Baye et al., 2020b, 2023) and Hawassa (Admasu, 2018).

Urban fringe areas are undergoing significant transformation and are witnessing a plethora of activities that can be attributed to the swiftness of urbanization and population growth (Wehrmann, 2008)). In the vast literature, urban fringes are referred to as 'rural-urban fringe', 'transition zone', 'peri-urban zone', or 'areas of interface' between urban and surrounding rural areas (Pryor, 1968; Simon, 2008). They are conceptualized in this study, following Simon (2008), as provisional areas between typically urban and unequivocally rural areas. As Africa has undergone rapid urbanization, its urban centres are largely becoming habitats for most of its people. Population projections indicate that approximately half of Africa's population will reside in its urban centres by 2030. However, the unparalleled expansion of urban populations in Africa has resulted in a swift rise in the demand for urban land. This demand is predominantly fulfilled through informal means, typically involving the conversion of fringe lands situated at the periphery of urban areas in the Global South (Fekade, 2000; Mersha et al., 2022; Toulmin, 2009; Wehrmann, 2008). In view of this, Banks et al. (2020:1) contend that it is necessary to "reconsider informality as a site of critical analysis" to enhance the exploration and comprehension of urban dynamics.

Informal settlements spontaneously expand on urban fringes, mostly outside municipal jurisdictions. They have become a 'perpetual challenge' for African cities and towns. Most frequently, squatters sprawl in the transition zones of most urban centers in the developing world (Adam, 2014; Baye et al., 2020a; Mersha et al., 2022). Globally, it is estimated that over one billion individuals reside within informal settlements encompassing slums and squatters. Customary landowners serve as the primary providers of housing despite the absence of formal recognition of their land rights by the state, as is evident in the cities of sub-Saharan countries. In other urban areas, local actors play an important part in the urban land market and the conversion of urban peripheries (Bryant, 1995; Li et al., 2018; Mersha et al., 2022). Studies suggest that in the setting of accelerated urban expansion, land disputes are often particularly severe, particularly in areas located on the periphery where competition and conflicts are intense. These claims are supported by DFID (2002) and Adam (2020). As a result, these regions commonly experience unauthorized land utilization, including the formation of informal settlements, as noted by Adam, (2014); Admasu (2018, 2019); and Dube (2013). Consequently, informal land markets situated on the urban periphery provide less expensive and substandard land for individuals who lack access to formal land and housing markets.

In recent years, there has been a noteworthy intensification in the growth of urban areas in Ethiopia, causing a heightened demand for housing land on the outskirts. Consequently, this has brought about various transformative effects in these regions, including the conversion of vacant public, agricultural, and forested lands into squatter settlements. Such encroachment processes have resulted in the depletion of agricultural farms and natural beauties such as forests, grazing land, and bare land, as well as a decrease in crop and food productivity (Fekade, 2000). Most research on informal economies and settlements has focused on larger urban centers (e.g., Abebe et al., 2019; Adam, 2014, 2020; Asefa,



2020; Baye et al., 2020a, 2020b, 2023; Kinfu et al., 2019; Mersha et al., 2022), which warrants further investigation.

Much of the urbanization is expected to take place in the small urban centres of the country. Given that much of the anticipated urbanization takes place in smaller urban centres, it is vital to study the changing aspects of informal settlements in them. When they increase in size and complexity, it is difficult for municipal authorities to manage their development both spatially and socioeconomically. Moreover, small towns contribute not only to the overall development of the nation but also to urbanization, rural transformation, and food security. Thus, they deserve more attention in studies of their growth processes.

Article 40 (3) of the Constitution of the Federal Democratic Republic of Ethiopia (FDRE) asserts that authority and control over the ownership of both rural and urban land as well as all-natural resources are a unique prerogative of the state and its various nations and nationalities (FDRE, 1995). While asserting the state's ownership of land, it also prohibits private ownership. Contrary to the provisions, urban informal land markets are rampant in many cities where both formal and informal actors cooperate (Baye et al., 2023; Mersha et al., 2022). In light of this, the fringes of Birbir town have been invaded and are predominantly occupied by informal settlements. The availability of fringe lands attracts buyers, brokers, politicians, local administrators, and peri-urban residents. Thus, it is apparent that the proliferation of unstructured habitation under the guise of outlying land encroachment has emerged as an intimidating obstacle for municipal and provincial officials.

This study aims to investigate the dynamics of informal settlement expansion in the periphery of Birbir Town in South Ethiopia. This study specifically aimed to assess the scope and configurations of land encroachment, identify the participants involved in the process of land encroachment and their respective roles, analyze the driving forces behind land encroachment, and examine the consequences of land encroachment in the research area. This study contributes to the existing literature on sustainable urban land development and management, particularly in peri-urban interfaces in the cities of sub-Saharan Africa, by presenting the case of Birbir, a small town. This study positions itself within the discourse on informal urbanism as informal settlement expansion, posing a huge socioeconomic challenge for cities, unless managed with appropriate policy instruments. In reality, formal and informal procedures complement each other in the broader context of informality and growth of informal settlements in peri-urban regions. This investigation postulates that a considerable amount of urbanization is projected to transpire into smaller urban centers, which warrants humble contemplation in scholarly inquiry, policy, and application.

Following this introduction, this article briefly presents the context and methodology. The results and discussion section presents the demographic and socioeconomic characteristics of the respondents, trends of fringe land invasion, causes for it, actors in it, modes of land acquisition, its effects, and municipal responses to fringe land invasion in the study area. The article concludes with a brief discussion of the general picture and implications of the study.

2. Materials and Methods

2.1. The Study Area

2.2.1. Location

Mirab Abaya (in English, West Abaya) Woreda is located in the Gamo Zone, Southern Nations, Nationalities, and Peoples Region (SNNPR) of Ethiopia. Mirab Abaya is named after Abaya Lake and is situated west of the lake. The woreda has 24 kebeles (the lowest administrative units), of which one is urban and 23 are rural. Birbir Town is the capital and administrative centre of Mirab Abaya Woreda, located along the main road from Addis Ababa to Arba Minch. It lies approximately 450 km south of Addis Ababa and 230 km away from the regional capital. Astronomically, the town lies at 6017' 30" latitude and 37046' 30" longitude. Figure 1 shows a location map of the study area (Regional Urban Planning Institute, 2015).

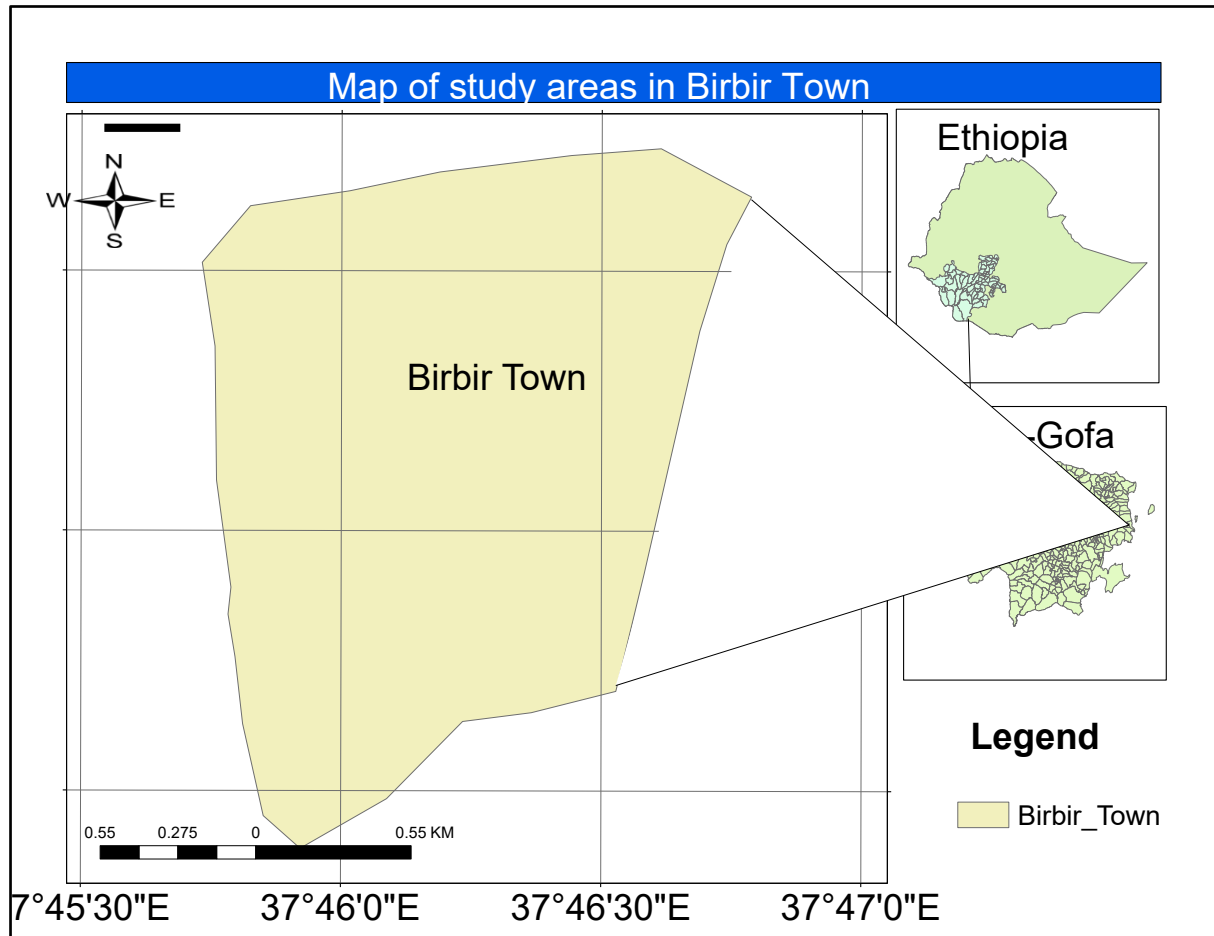


Figure 1. Location Map of the Study Area. Source: By the Authors, 2020.

2.2.2. Foundation of Birbir Town

Birbir is believed to have been uninhabited and covered with forests, bushes, and grasses. The area was administered under the Eezo Woreda of Gamo Awraja, which was based on the Gamo highlands. The woreda opened a police station at Folla Saygno, near Lake Abaya, to monitor transportation. Folla is the name of a famous person living in the area, and Saygno in Gamogna means Monday. There was a weekly market on Monday. It is believed that the first foundation of Birbir was laid in the Folla Saygno. Birbir moved to its present location after the change of the Addis Ababa-Arba Minch road from the lakeside route to the present route. Upon the completion of the Addis Ababa-Arba Minch gravel road in 1954, the market center shifted from Lake Side or Folla Saygno to its present location. Following that, in 1956, the police station was shifted to the new transport route area, that is, to the present location of Birbir. Birbir Town is believed to have been gradually founded along the new transport route since 1956. In 1991, Birbir obtained legal town status. The origin of Birbir is not clear; however, according to some sources, it is believed to have been taken from Birbir Dudane, a nearby lowland rural kebele (Regional Urban Planning Institute, 2015). Figure 2 shows the satellite image of Birbir town extracted from Google Earth.



Figure 2. Satellite Image of Birbir town from Google Earth.

2.2.3. Physical Characteristics

Birbir is situated within the expansive Great East African Rift Valley System and has an entirely *kola* (lowland) agroecology. According to recent data, this spans approximately 397.5 hectares. The altitude fluctuates between 1217 and 1272 meters above sea level. During the wet season, the town is susceptible to inundation owing to its flat terrain. The average annual temperature varies between 180 and 320 °C. Rainfall in the area is seasonal, exhibiting poor distribution and marked variability from year to year. The average annual precipitation is 1600–2000 mm (Regional Urban Planning Institute, 2015).

2.2.4. Demographic and Socioeconomic characteristics

According to the Central Statistical Agency (CSA, 2007), the total population of Birbir was 5,834, of which 2,931 were male and 2,903 were female. However, as to CSA (2023), the projected total population was 16,411, of which 7,898 were male and 8,513 were female. Between 2007 and 2023, the population increased by 64.45%. Thus, it is not surprising to expect informal settlement expansion due to this unprecedented population increase in the town. Birbir accounts for approximately 14% of the total woreda population. Concerning ethnicity, Gamo is the most dominant ethnic group, making up 71.93%; Wolaita accounts for 22.63%; Amhara accounts for 2.17%; and the rest (Gidicho, Gurage, Oromo, Tigre, Kembata, Gofa, Dawuro, Hadiya, Zeysie, and Derashe) together account for 3.27%. The religious composition of the town shows that 69.67% were followers of Protestantism, 28.31% were Orthodox Christians, 1.34% were Muslims, and the remaining 0.68% belonged to other religions (CSA, 2007). The residents of the town engaged in different economic activities; the majority of them engaged in small-scale commercial activities, agriculture, and services.

2.3. Research Design

This study employed a mixed-methods approach that integrated both qualitative and quantitative techniques. It employed a descriptive survey design and was predominantly descriptive with

exploratory elements. Clark & Creswell (2021) assert that the research design that is most efficacious is one that amalgamates quantitative and qualitative methods to procure an all-encompassing comprehension of the processes that yield the observed outcomes. In the present study, a combination of primary and secondary data was employed. Primary data were gathered via open-ended and closed-ended survey questionnaires, structured and semi-structured interviews, focus-group discussions, and field observations. Moreover, this research has made available secondary data sources by scrutinizing existing documents and publications. The main sources of secondary data were official and legal documents, books, reports, previous research, and the latest journal articles.

2.3.1. Sampling Techniques and Sample Size Determination

Birbir Town was purposefully selected for its pervasive informal settlement expansion. The town has eight menders (small units or wards lower than kebele), which are surrounded by three rural neighbouring or bordering kebeles, such as Delbo in the western and southern directions, Alge in the eastern direction, and Fetele-Dorenje kebele in the northern direction. Thus, the town's rapid land invasion is prevalent in the West. Among the four areas, two menders (mender and eight) from Birbir town and two rural kebeles, Delbo and Fetele-Dorenje, were selected, as these areas exhibit a relatively high proportion of informal settlements. The total target population was 936 households, and the sample size was 156 household heads. For each kebele, lists of household heads were taken from the kebele administration to form the sampling frame (see Table 1). A simple random sampling technique was used to carefully select heads of households that would be representative of the study area. Yaman's (1967) formula was employed to determine the appropriate sample size.

$$n = \frac{N}{1 + (e)^2}$$

Where: n indicates the desired sample size

N indicates the target population of the study

e indicates the margin of error

In this case: $n = \frac{936}{1 + 936(0.07)^2} = 156$ is the sample size of the study.

Table 1: Number of Sample Households of the Study Areas

Name of Sample <i>kebeles</i>	Household heads			Sample Size	%
	M	F	T	HHS	
<i>Mender one (Birbir town)</i>	160	64	224	37	17
<i>Mender eight (Birbir town)</i>	147	56	203	34	17
<i>Delbo (Rural kebele)</i>	200	38	238	40	17
<i>Fetele-Dorenje(Rural kebele)</i>	203	68	271	45	17
Total	710	226	936	156	17

M=Male

F= Female

T= Total

HHS= Household Heads

Source: Birbir Town Municipality.

2.3.2. Instruments of Data Collection

The study's data acquisition tools primarily comprised a questionnaire, interview schedule, FGD guide, and observation checklist. The data were collected between January and February 2019. A survey questionnaire was constructed to incorporate both open-ended and closed-ended questions. This strategic choice was implemented to avoid limiting the respondents' ideas, as closed-ended questions tend to do. On the other hand, open-ended questions are highly advantageous when seeking to garner

opinions, attitudes, and perceptions. The survey was conducted among the leaders of the selected households on the periphery of Birbir Town. To guarantee the reliability of the information gathered from respondents, the questionnaires were initially formulated in English. It was then translated into Amharic before being conducted in *Gamogna* (the local language) with the aid of native data-gatherers who were competent in elucidating the queries for those interviewees who were unable to read.

Eight key informants were selected for the study using purposive sampling. Informants were selected based on their role and knowledge in relation to informal settlements in the town. Interviews were conducted with the participants using an interview schedule. The participants included one expert from the municipality, three from the administration, and four from the local community. As the participants were directly involved in the informal land market, they were believed to provide useful and insightful information regarding fringe land invasions in the study area. They were asked about the trends, magnitudes, actors, and driving factors of fringe land invasion and the town's land management system. To this end, separate structured and semi-structured interviews were conducted with key informants. The questions were formulated with the intention of eliciting a frank and flexible response, facilitating an organic dialogue between the interviewer and the participants.

Three focus group discussions were conducted during the data collection process. These discussions consisted of 5-7 members in each group and lasted approximately two hours. The selection of FGD members was based on their influential status as local elders, kebele leaders, brokers, or peri-urban farmers. Participants were selected based on their level of involvement in the informal land market and the prevalence of informal settlements in the area. Additionally, field observations were utilized as observational evidence, which proved to be of great value in collecting supplementary information (K.Yin, 2011; K. R. Yin, 2020; R. K. Yin, 2018). Therefore, first-hand data were collected from the field by directly observing the selected areas using a digital camera from the fringes of Birbir Town. Ethical considerations were strictly followed during the data collection process. This involved obtaining appropriate letters of permission prior to data collection, seeking participants' consent, and informing them of the study's purpose.

3. Results and Discussion

3.1. Demographic and Socioeconomic Characteristics

To understand the intricacies of the proliferation of informal settlements in the town, it is crucial to consider the fundamental characteristics of the study participants. Participants' demographic characteristics included sex, age, marital status, and household size. Socioeconomic characteristics included residential zone, religious orientation, educational accomplishment, and employment status of the household head. Table 2 shows respondents' demographic and socioeconomic profiles.

Table 2. Demographic and socioeconomic background of respondents.

Variables	Categories	Frequency	Percent
Sex	Male	118	76
	Female	38	24
Age	20-29	26	17
	30-39	46	29
	40-49	66	42
	50-59	15	10
	60 and above	3	2
Marital Status	Single	30	19
	Married	98	63
	Separated	24	15
	Divorced	4	3
Family Size	1-2	8	5
	3-4	31	20



	5-6	48	31
	7-8	58	37
	9 and above	11	7
Residential Area	Rural	85	54
	Urban	71	46
Religious Background	Orthodox	63	40
	protestant	83	53
	Muslim	4	3
	Others	6	4
Educational Background	Illiterate	29	19
	Primary	66	42
	Secondary	49	31
	Tertiary	12	12
Employment Status of Household Heads	Farmers	60	38
	Town dwellers	41	26
	Daily Labourers	32	21
	Government Employees	10	6
	Merchants/Traders	8	5
	Unemployed	6	4

Source: Computed from Household Survey, 2019.

As shown in Table 2, 76% (n = 118) of the respondents were male, and 24% (n = 38) were female. Regarding age distribution, 42% (n = 66) were aged 40–49 years, 29% (n = 46) were aged 30–39 years, 17% (n = 26) were aged 20–29 years, 10% (n = 15) were aged 50–59 years, and 2% (n = 3) were above the age of 60 years. Regarding marital status, 63% (n = 98) of respondents were married, 19% (n = 30) were single, 15% (n = 24) were separated, and 3% (n = 4) were divorced. The family size of the sample respondents, 37% (n = 58) had a family size of 7–8, 31% (n = 48) had 5–6, 20% (n = 31) had 3–4, 7% (n = 11) had more than 9, and 5% (n = 8) had 1–2.

Regarding residential areas, 54% (n = 85) lived in rural areas, while 46% (n = 71) were urban residents. Concerning religious composition, 53% (n = 83) of respondents were followers of Protestantism, 40% (n = 63) were Orthodox Christians, 4% (n = 6) were followers of other religions, and 4 (3%) were followers of Islam. As Table 2 indicates the educational background of the respondents, 66 (42%) have primary education, while 31% (n = 49) have secondary education, 19% (n = 29) are illiterate, and only 8% (n = 12) have tertiary education. Gender-wise, 62% of male respondents and 19% of female respondents had formal education, while illiterate women accounted for 5% and illiterate men constituted 14%. Regarding the employment status of the household heads, 38% (n = 60) were farmers, 26% (n = 41) were urban dwellers, 21% (n = 32) were daily laborers, 6% (n = 10) were government employees, 5% (n = 8) were merchants, and 4% (n = 6) were unemployed. Thus, this study involved diverse demographic and socioeconomic groups in the study area.

3.2. Trends of Fringe Land Invasion in Birbir Town

As discussed in the background section, Birbir developed from a police post to a village and then to a town. The data obtained from the municipality show that Birbir received its first master plan in 2000 and its second basic plan in 2015. The total area of the town before 1999 was only 46 hectares, but in 2000 it increased to 360 hectares, and in 2015 it became 397.5 hectares. The trends of urban-rural fringe land invasion in two areas of the Birbir Town periphery and adjacent land (unreserved green areas near the town and along the transport route) from 2015 to 2019 are shown in Table 3.

Table 3. Trends of informal houses built and rate of change in Birbir town (2015-2019).

Year	Number of houses built informally	Period	Rate of change (%)
2015	6	-	-
2016	13	2015-16	53.81
2017	22	2016-17	50.00
2018	37	2017-18	40.54
2019	78	2018-19	52.56

Source: Based on Bibir Town Municipality, 2020.

As Table 3 shows, there has been a remarkable increase in the documented number of houses built informally between 2015 and 2019 in Birbir Town. Quantitatively speaking, the figures might appear small, as the study town was small. However, when looking at the annual rate of change, the increment was alarming. Except for 2017-18, for the three periods, the rate of change in the number of houses informally built on the fringes of Birbir was 5% or slightly higher. However, it should be noted that the data presented only indicates which municipality can be identified and counted. However, because of its informal nature, the actual figure can be much higher than that presented above. Key informants and participants in the focus group concurred that the town experienced planned and unplanned growth and expansion. The building of informal houses occurs largely in areas meant for greening and in the peripheries of the town along the main transport route. Informants also noted increased migration from the Gamo highlands to Birbir, which in part increased the demand for land on the fringes of Birbir. Figure 3 shows a sample of informally built houses on the fringes of Birbir Town.


Figure 3. Sample of informally built houses in the periphery of Birbir Town.

Source: Photo by Researcher, 2019.

3.3. Causes for Fringe Land Invasion in Birbir

Land invasion is rampant in cities in the developing world, particularly in the Global South. This could be due to the interplay between several factors. The respondents were asked about their perceived causes of urban fringe land invasion in Birbir Town. The responses are shown in Figure 4.

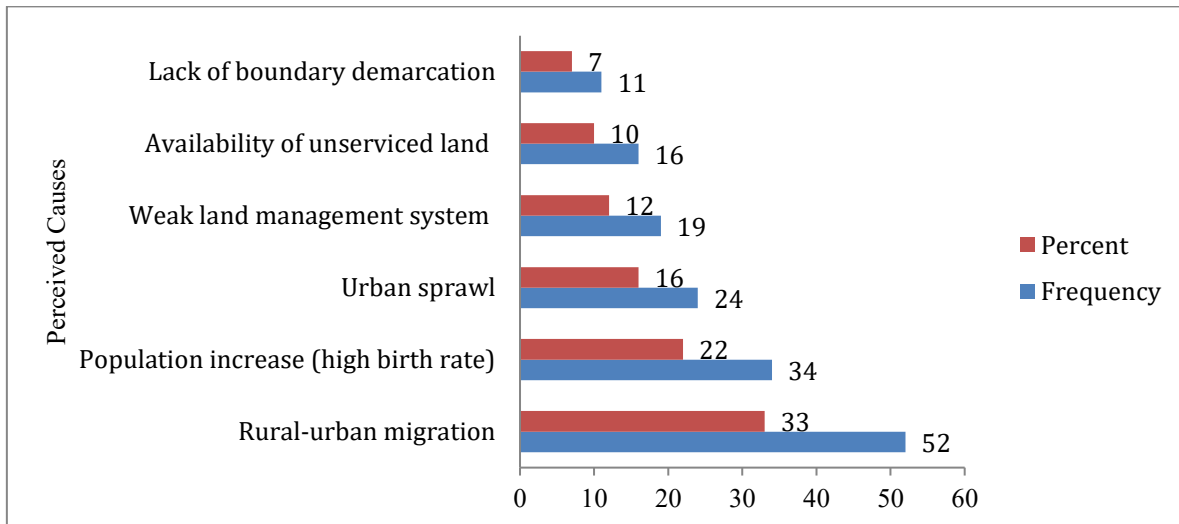


Figure 4. Perceived causes for informal settlement expansion in Birbir Town.

Source: Computed from Household Survey, 2019.

As illustrated in Figure 4, the primary perceived catalysts driving the expansion of informal settlements and subsequent land encroachment on the outskirts of Birbir town comprise population growth resulting from rural-urban migration, natural increase, and urban sprawl. Furthermore, the suboptimal land management system of the municipality, coupled with the presence of unoccupied land or land designated for green spaces on the fringes, and the absence or erosion of boundaries between urban and rural jurisdictions, exacerbate the situation. The current findings align with those of Asefa (2020), who concluded that the inefficiency of the formal land supply system contributed to the spread of informal settlements. This is mainly due to the fact that the formal system prevents access to land by the overwhelming majority in cities; the problem is rampant in cities in East Africa (Admasu, 2018; Baye et al., 2020b, 2023; Mersha et al., 2022). Consequently, informal land transactions fill the exclusion gap to the extent that informality is considered the norm. In the context of sub-Saharan Africa, it can be observed that the majority of urban residents are excluded from the formal housing markets due to financial reasons, thus forcing them to reside in informal settlements (Mottelson, 2020).

3.4. Modes of land acquisition by Respondents in Birbir

It is clear that there are different modes of land acquisition in the urban centers of the global south. As the formal channels of land supply and delivery are not efficient, people resort to informal channels with the expectation of formalization sometime in the future. Respondents were asked how they acquired the land upon which they had built their houses. According to their replies, they acquired it using different means. Figure 5 illustrates the mode of land acquisition by respondents in Birbir Town.

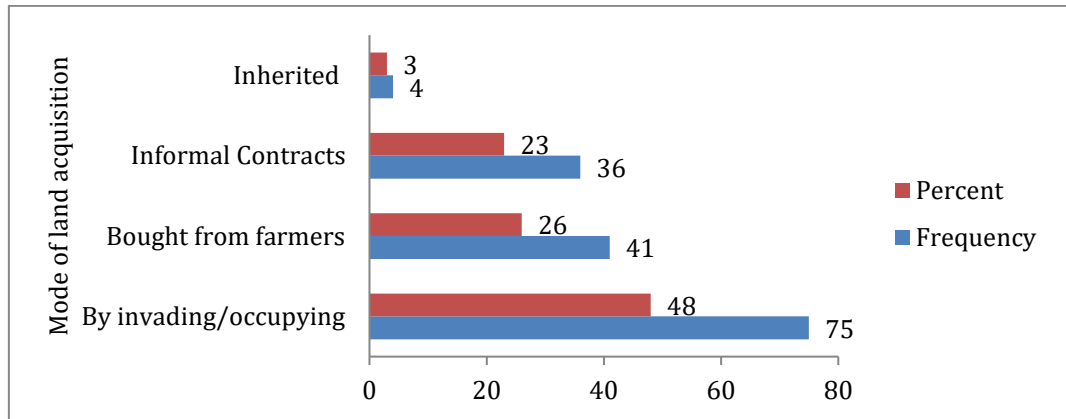


Figure 5. Modes of land acquisition by respondents in Birbir Town.

Source: Computed from Household Survey, 2019.

As can be clearly seen from Figure 5, occupying land by invasion is the dominant means of land acquisition, followed by buying from farmers, short-term informal contracts for use, and inheritance. This finding is similar to that of Asefa (2020), who outlined purchasing from peri-urban farmers and inheritance as the mainland acquisition modes in Debre Berhan Town. This happens when the formal land delivery system is inefficient and cannot meet demand. Invasions always happen at night when they build a *yecherqa bet*, a small informal house built on the plot. This is because the increasing pressure on land has caused the commoditization of land use changes and land transactions (Mottelson, 2020; Steel et al., 2020). The majority of land seekers and entrepreneurs opt for the informal channel, as the formal one is not able to provide because of its bureaucracy, expensive administrative procedures, allocation inefficiencies, inappropriate use of public offices, and rampant corrupt practices (Alene, 2022; Dube, 2013; Mersha et al., 2022).

As per the stipulations of the Ethiopian Constitution, land is the property of the state and is not subject to any form of commercial transaction. In practice, the land market operates on different scales and involves different actors. Because the town is small, land is cheap in the informal market. For example, a person can buy a plot of land for 50,000–120,000 Ethiopian Birr (approximately 1134–2270 US Dollars (USD) at the July 2021 exchange rate of 1 USD = 44 ETB). It could also be based on negotiations between buyers and sellers and sold based on *yemender wul*, a local informal written agreement. When a *yemender wul* is signed in the presence of three individuals, the local elders also sign as witnesses. *Yemender wul* could be considered a form of social ordering that provides buyers with a higher level of positive regularization prospects than demolition. This is similar to the situation in most African cities, where access to land for housing is regulated by social order (Mottelson, 2020; Wehrmann, 2008; Zhang et al., 2020). Although the informal land market falls outside the formal channel, in most cases it is managed locally (Mersha et al., 2022). The price depends on the size of the plot and its location. Most fringe areas are preferred by buyers, as prices are cheaper than in areas closer to the town. These results are consistent with Hepner's (1985) research, which identified a multifaceted interplay of behavioural, institutional, and locational economic variables that typify the informal urban land market. This was evident in the study town. A recent study by Deuskar (2019) discussed informal urbanization and clientelism as they offer poor entrée to the state, although the benefits are insufficient and mostly not equitable. In the same study, urban centres in more clientelistic countries tended to experience informal settlement expansion. According to Mersha et al. (2022), informal settlements proliferate in peri-urban areas owing to a multitude of factors, such as heightened corruption, false electoral promises, and weak institutional capacity and coordination. The following section discusses the actors and their roles in the fringe land invasion of the study town.

3.5. Actors in fringe land invasion in Birbir Town

As informal settlement expansion is a complex phenomenon, it involves various actors. These actors play roles that facilitate the expansion of informal settlements in fringe lands. Figure 6 shows the actors involved in the fringe land invasion in Birbir.

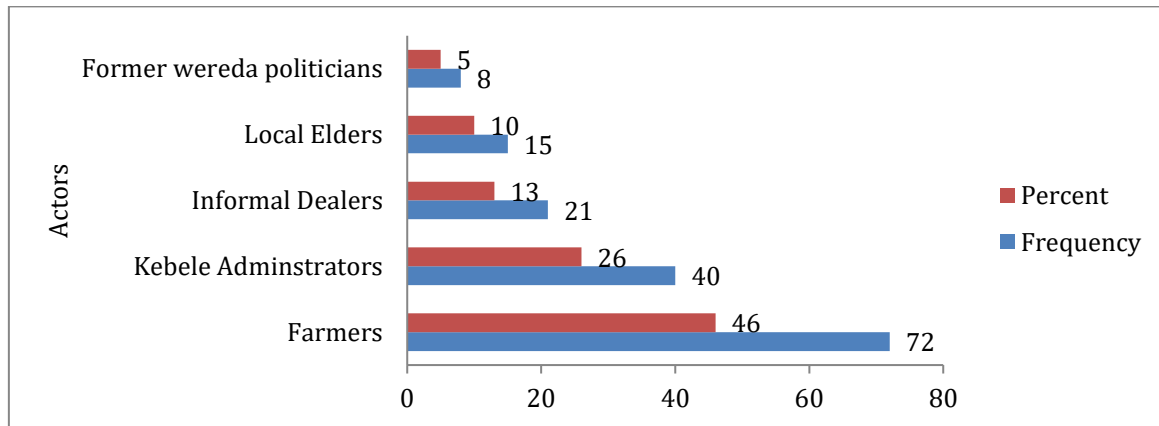


Figure 6. Actors informal fringe land invasion in Birbir Town.

Source: Computed from Household Survey, 2019.

As evident from Figure 6, the participants involved in the fringe land invasion were peri-urban farmers, kebele administrators, informal dealers or brokers, local elders, and former Woreda political leaders. The current findings align with those of Asefa (2020), who concluded that the inefficiency of the formal land supply system has contributed to the spread of informal settlements. This outcome is congruent with other investigations such as Bryant (1995), Adam (2014, 2020), and Mersha et al. (2022). Bryant (1995) emphasized the crucial role played by "local actors" in the process of converting the urban periphery into informal settlements by means of informal land transactions. Adam (2014, 2020) recognized the state, private business sector, and local community as the principal stakeholders in the urban informal land market, with conflicting interests in peri-urban land in the Ethiopian setting. According to Tellman et al. (2021), "institutional entrepreneurs" play a vital role in informal urban expansion, as evidenced by Mexico City. According to Kihato et al. (2013), the local informal land markets are distinguished by a convoluted network of societal stakeholders. These actors confer trustworthiness and validity to the presence of a local land market. The contention put forth by the authors suggests that these socially entrenched land markets illustrate the fragmentation and management of urban territory, and their presence also alters our perception of formality and informality in African cities. This scenario depicts how informal urban economies are collaboratively generated by state and non-state regulatory systems (Kihato et al., 2013).

3.6. Effects of Fringe Land Invasion in Birbir Town

It is evident that informal settlement expansion causes physical, social, political, and environmental problems in most cities in the Global South. Participants were asked about their perceived negative effects of informal settlement expansion in the form of fringe land invasion in Birbir Town. Figure 7 presents the perceived negative effects of informal settlement expansion in the study area.

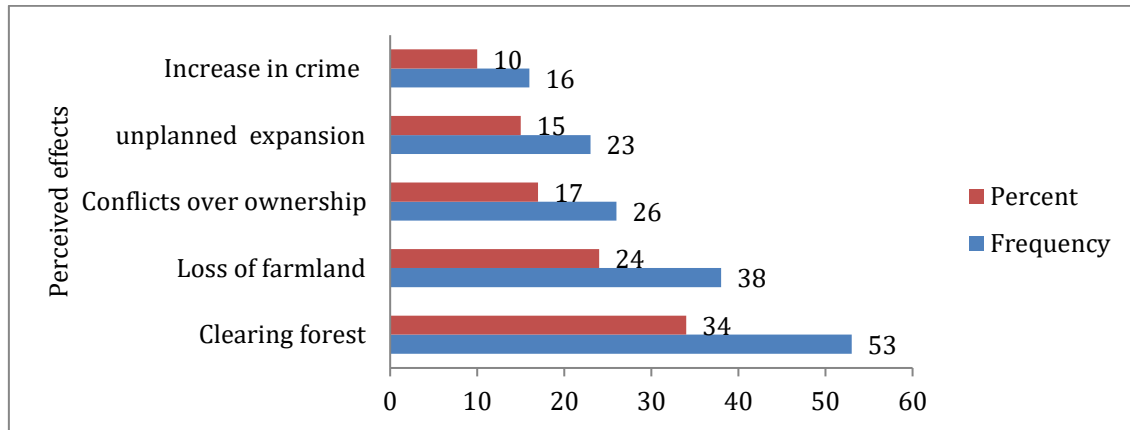


Figure 7. Perceived negative effects of informal settlement expansion in Birbir Town.
Source: Computed from Household Survey, 2019.

As Figure 7 shows, informal settlement expansion in the form of fringe land invasion has resulted in forest and bush clearance, loss of farmland to settlements, increased conflict over land ownership claims, unplanned expansion of settlements, and an increase in criminal activities. According to Zhang et al. (2020), because informal settlements expand in a disorderly fashion, they do not follow the social, economic, and environmental features of sustainable development.

3.7. Municipal Responses to Fringe Land Invasion in Birbir

Many studies have demonstrated that various municipal responses have been implemented in the cities of the Global South to address informal settlements. The two primary strategies employed in developing countries to address informal settlements are regularization and demolition. Experiences garnered from informal settlements could serve as indispensable lessons for developing inclusive, effective, and responsive sustainable urban planning strategies in the African context. Respondents were queried about their cognizance of any initiatives implemented by the local government to suppress the escalation of unregulated settlements in Birbir. As illustrated in Figure 8, the perceived interventions executed by the authorities to tackle the dissemination of informal settlements materialized in the form of peripheral land encroachment in Birbir Town.

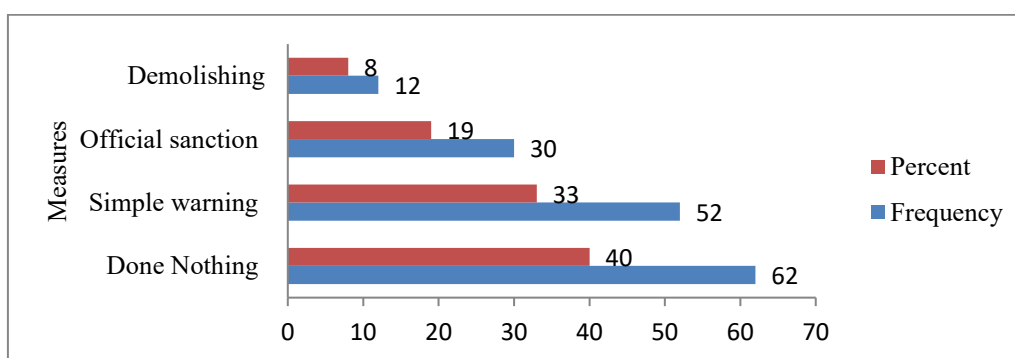


Figure 8. Measures taken on informal settlements in Birbir Town.
Source: Computed from Household Survey, 2019.

As depicted in Figure 8, despite the efforts of municipal and administrative authorities to alleviate the spread of informal settlements in the guise of land invasion on the periphery of the town, their endeavours have proven inadequate in regulating it, as evidenced by the increase in the number of dwellings constructed informally on the outskirts. For approximately 40% of the respondents, the municipality opted to do nothing about these settlements; for approximately 30%, it gave a simple warning. Hardliner measures, such as sanctions and the demolition of informally built structures were



applied less frequently in the context of Birbir. As indicated by focus groups and key informants, as fringe areas are outside the jurisdiction of the town as per the plan, it is difficult for urban authorities to control them. The key informants expressed the measures as 'lesse-faire, where, in most cases, they take no action by ignoring the scale, intensity, and severity. Such situations provided fertile grounds for invaders and settlers to continue engaging in informant land markets in the town.

4. Conclusions

This study investigated informal settlement expansion in the form of rural-urban fringe land invasion and its effects in Birbir town. Informal settlements in the study area are dramatically increasing from year to year, mainly due to fringe land invasion. Rural-urban fringe land invasion processes have been enhanced by factors such as rural-urban migration, population growth, unplanned urban sprawl, poor land administration or a weak land management system, available and unpreserved vast public land near the town, and loose or no clear boundary demarcation, which aggravated fringe land invasion in the peripheries of Birbir town.

This research makes a significant contribution to the understanding of sustainable development and management of urban land, with a particular focus on peri-urban interfaces in sub-Saharan African cities, by presenting Birbir, a small town, as a case study. This study situates itself within the discourse of informal urbanism in ordinary cities and advocates going beyond the formal-informal divide dichotomy. In reality, formal and informal procedures complement each other within the broader context of informality and the growth of informal settlements in peri-urban regions. Consequently, this will have extensive repercussions for the physical and socio-economic development of urban centres. The study pointed out that, concerning rural-urban fringe land invasion, the actors were mainly local farmers, informal land brokers, irresponsible kebele administrators, and former woreda cabinet members or politicians. The occupiers held the land through free holding, buying it informally from farmers by the name of an informal contract for many years, and inherited it from family and relatives. The analysis also indicated that the adverse effects of the rural-urban fringe land invasion in the study area were forest and bush clearance, reduction of agricultural land, conflicts between rural-urban fringe land ownership, unauthorized land occupation trends, an unplanned pattern of urban expansion, and an increase in criminal activities that created hostile peri-urban neighbourhoods.

It is evident from the research that land has evolved into an intricate matter to manage. Thus, without proper mechanisms and frameworks in place, it would be difficult to control informal settlements in smaller urban centres such as Birbir. With ever-increasing rural-urban migration and population increases, the demand for land has increased, and it is expected to rise in the unforeseeable future. In the past, state land, public land, and private land were not well identified, mapped, properly delimited, classified, and registered in the main land bank. This made it difficult for authorities at different levels to administer and manage the peri-urban land. It is evident that informal settlement expansion has led to the unwise use of urban land and created serious challenges for service and infrastructure provision on the fringes of the town. Despite the growing challenge of informal settlement expansion and fringe land invasion in the study town, the authorities opted for a do-nothing or laissez-faire approach. This implies that as the town grows in size and complexity, the problem persists and poses a huge developmental challenge to local authorities.

The findings of this study indicate that formal and informal sector processes coexist in relation to informal land transactions, fringe land invasion, and informal settlement expansion on town outskirts. This study enriches our understanding of informal settlement expansion, not as a manifestation of the dichotomy between formal and informal sectors but rather as a mutually reinforcing phenomenon. The discussion in this study primarily centers on the participants involved in the process of fringe land invasion in the study town. Consequently, it is imperative to adopt multiscale approaches to examine informality in general and informal settlement expansion in small towns in particular.

The topic of informal settlement has garnered significant worldwide interest as a key facet of inclusive and sustainable urban development. The inadequacy of formal land provision stood in stark contrast to the rising urban population and concomitant need for land. Thus, to ensure sustainable and inclusive



urban development in smaller towns in the context of Ethiopia, urban expansion should be properly planned, monitored, proactively administered, and managed by competent institutional frameworks while ensuring equitable access to the needy. There is a need for urban and rural administrations to work together to ensure equitable access to urban land and fair and lasting benefits for peri-urban or fringe residents.

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Conflict of Interests

The Author(s) declares(s) that there is no conflict of interest.

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Data availability statement

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author/s.

CRediT author statement

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